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[Brief Description of the Drawings]

[Drawing 1] It is the 1st example of an embodiment of this invention.

[Drawing 2] It is the 2nd example of an embodiment.

[Drawing 3] It is the 3rd example of an embodiment.

[Drawing 4] They are the 1st, 2nd, 3rd, and 4th examples.

[Drawing 5] It is the 4th example of an embodiment.

[Drawing 6] It is a conventional example.

[Drawing 7] It is a conventional example.

[Description of Notations]

1 [- A joint body, 32 / - A swivel joint part, 58 / - Eccentric inclined flange fitting joint part] - A manhole main part, 4 - An inhalant canal, 7, 7A - A by-pass, 31

DETAILED DESCRIPTION

[Detailed Description of the Invention]**[0001]**

[Field of the Invention] This invention relates to the inner by-pass member for the product manholes made from concrete.

[0002]

[Description of the Prior Art] Generally surface-of-the-earth inclination in the manhole made from concrete installed in a steep place as an object for level difference junction. If the inhalant canal for wastewater is directly provided and released on the side attachment wall, become what is called waterfall dropping, and filth will scatter on a side attachment wall, and will adhere, or filth will accumulate on an invert and the outskirts of it, and will lose the function of a manhole, and. When the level difference of this inhalant canal and excurrent canal is 0.6 m or more, it does not have scouring and will corrode partes basilaris ossis occipitalis, such as an invert of a manhole, for example.

[0003] Therefore, in this side or inside of a manhole, the down pipe, i.e., inside, or the outside by-pass was provided, and it lost aforementioned waterfall dropping, and moreover, it has regulated so that there may be no trouble also in check and cleaning. Using the manhole made from concrete with an inner by-pass for horizontal form piping which does not almost have an inclination of an inhalant canal, the manhole made from concrete with an outside by-pass is that an inhalant canal uses it for inclination piping to temporary proper use.

[0004]By the way, one example of the manhole made from concrete with an inner by-pass is described. In drawing 6, 1 is a manhole main part, formed the invert 2 in the pars basilaris ossis occipitalis, and has formed the lid 3 in the ceiling part. The inhalant canal 4 for wastewater made from vinyl chloride is connected to the side attachment wall of this manhole main part 1, and the invert 2 and the excurrent canal 5 which was open for free passage are connected to it at the pars basilaris ossis occipitalis.

[0005]And the inner by-pass is connected to this inhalant canal 4. That is, the vertical-like by-pass 7 has fallen via the method joint [of four]-like joint 6. This by-pass 7 comprises the adhesion receiving window color 8 and 90-degree elbow 9 grade, and is fixed to the side attachment wall of the manhole main part-1 by the clasp implement 10.

[0006]The rubber ring faucet 12 which made the short pipe part long ** a little is formed in the inhalant canal side of the joint body 11 of this joint 6, and, upward, the overflow and inspection post 15 is formed for the loading slot which inserts the sideways plug 13 in this and an opposite hand, respectively. 16 show a communication trunk among a figure and 18 shows FRP coating.

[0007]In the above manholes made from concrete with an inner by-pass. Although the mounting work of the by-pass 7 becomes easy as well as the ability to prevent waterfall dropping etc. compared with a thing with an outside by-pass and check and cleaning of the by-pass 7 can moreover also be relieved, if the inclination of the inhalant canal 4 becomes sudden. Since the by-pass 7 was connected via the method joint [of four]-like joint 6, the by-pass 7 did not fall in the shape of vertical, but the joint 6 came to be located in the central site of the manhole main part 1, the space was taken, and the problem that it was inconvenient was in the manhole in which people go in and out.

[0008]Therefore, although changing into the manhole made from concrete with an outside by-pass is also considered, In the thing with an outside by-pass, the piping space in the periphery of a manhole is needed, moreover, since the mounting work of an outside by-pass is not easy compared with an inner by-pass as mentioned above, this idea is not adopted but the trial which is going to give the terminal area of the inhalant canal in the method joint of four an ascending vertical angle is made.

[0009]For example, in JP,4-117286,U, the method joint 20 with a variant rubber ring faucet as shown in drawing 7 of four is proposed. That is, the inhalant canal 4 had rushed into the manhole main part 1, and connected the method joint 20 of variant rubber ring carrier pointing 4 to the tip part, and the by-pass 7 has fallen to this.

[0010]Although the same structure as the former as shown by drawing 6 is used for the facing-up [in this method joint 20 of four], and anti-inhalant canal side, the aforementioned variant rubber ring faucet is adopted as the inhalant canal side. The fitting groove 22 for rubber rings is established in that opening, and this variant rubber ring faucet is set even from this fitting groove 22 to the middle of the short pipe part 23 for rubber ring faucets. In the bottom side of the short pipe part 23, the 1st facing-down inclined plane 24 is formed, the 1st level surface 25 is formed in the upper surface side, respectively, it ranks second and sets by the method joint crossing part of four from middle, and the 2nd level surface 26 is formed in the bottom side of the short pipe part 23, and the 2nd facing-down inclined plane 27 is formed by the upper surface side, respectively.

[0011]Therefore, if the tip part will be inserted so that the 1st level surface 25 may be met if approximately horizontal form rushes into the inhalant canal 4 into the manhole main part 1, and it rushes into the inhalant canal 4 with an ascending vertical angle

into the manhole main part 1, the tip part will be inserted so that the 1st facing-down inclined plane 24 may be met. Therefore, although the seal is carried out by the rubber ring faucet also in the state of inrush [which], unlike the usual rubber ring faucet for mounting pipes standardized, so to speak, a variant rubber ring faucet is constituted, and the ascending vertical angle (head swing angle) of the inhalant canal 4 is formed still more greatly from the usual rubber ring faucet.

[0012]

[Problem(s) to be Solved by the Invention]However, in the method joint 20 of four of variant rubber ring carrier pointing of this proposal. Since the inhalant canal 4 forms the angle of the 1st facing-down inclined plane 24 in the predicted maximum angle that is piped downward by inclining. The case where there is no inhalant canal 4 downward so much, or in the case of horizontal form. With the 2nd facing-down inclined plane 27 and the semilunar stopper wall 28 hung to the inner. Some pipelines from the inhalant canal 4 will be closed, it is formed in the bottom side by the 2nd level surface 26, and because the pipeline is extracted, the bottom side. Since the smooth flow was checked and filth was hooked with the semilunar stopper wall 28 when the inhalant canal 4 became a full bobbin style, there was a problem that earth and sand and filth still stagnated in the inhalant canal 4.

[0013]Then, the 1st purpose of this invention is to solve this problem, the 2nd purpose enables viewing of an inhalant canal extensively out of a manhole, and the purpose of further others is to connect an inhalant canal and a joint firmly and to acquire the reliability of construction.

[0014]

[Means for Solving the Problem]In an inner by-pass member which this invention abbreviated-intersected perpendicularly an inhalant canal in which a downward inclination is possible, and a by-pass fixed to a side attachment wall of a manhole main part, and connected it to a joint body provided in a manhole made from 1 concrete, respectively in order to attain this purpose, Join said inhalant canal and a joint body with glue, and an inner by-pass member for the product manholes made from concrete connecting a by-pass and a joint body via an adjustable joint is made into a gist. An inner by-pass member for the product manholes made from concrete which used an adjustable joint of two claims 1 as an eccentric inclined flange fitting joint is made into a gist. An inhalant canal in which a downward inclination is possible to a joint body which made a gist an inner by-pass member for the product manholes made from concrete which used an adjustable joint of three claims 1 as a flexible joint, and was provided in a manhole made from 4 concretes. In an inner by-pass member which abbreviated-intersected perpendicularly and connected a by-pass fixed to a side attachment wall of a manhole main part, respectively, said inhalant canal and a joint body are joined with glue, and let an inner by-pass member for the product manholes made from concrete constituting said by-pass from a flexible tube be a gist.

[0015]

[Embodiment of the Invention]The example of an embodiment shown in an accompanying drawing describes this invention in detail. Although the example and drawing 5 which drawing 3 uses the 1st example of an embodiment of this invention and drawing 2 for the 2nd example of an embodiment, and use it for the 3rd example of an embodiment and to which drawing 1 uses drawing 4 for the 1st, 2nd, 3rd, and 4th examples of an embodiment show the 4th example of an embodiment. The conventional example, the identical parts, or the intersection shown by drawing 6 and drawing 7 omits a graphic display and its explanation.

[0016]an embodiment of the invention – the manhole made from concrete which applies an example is suitable for No. 1 - the No. 7 manhole with a by-pass which were standardized, and suitable for the manhole in which surface-of-the-earth inclination moreover serves as level difference junction at a steep place.

[0017]The joint 30 of the 1st example of an embodiment is a product made from vinyl chloride, and ** profile composition is carried out in drawing 1 with the LT (90 degrees of path difference large bend Y)-like joint body 31, and the swivel joint part 32 made from vinyl chloride connected to the branch pipe part 31A. Therefore, this joint 30 is connected to the tip part of the inhalant canal 4 which has rushed in into the manhole main part 1 (refer to drawing 6), and the by-pass 7 is connected to the swivel joint part 32 of this joint 30. Of course, the inhalant canal 4 is made to penetrate and rush into the manhole main part 1 as a construction method, it is very good in the method of joining with glue the joint 30 which attached the by-pass 7 to the tip part of this inhalant canal 4, and connecting with it, and the joint 30 may be fixed to the manhole main part 1 as drawing 6 shows.

[0018]Therefore, the by-pass 7, the joint 30, and a part of inhalant canal 4 can be called an inner by-pass member.

[0019]Therefore, even if the downward angle (ascending vertical angle) of the inhalant canal 4 becomes large and the joint body 31 inclines downward, the falling state of the by-pass 7 is corrected by the swivel joint part 32, and it becomes vertical [like] so that the side attachment wall of the manhole main part 1 may be met. As a result, since according to this joint 30 the by-pass 7 approaches the side attachment wall of the manhole main part 1 as much as possible and a narrow part is not formed in the communication trunk way of the inhalant canal 4 and the joint 30, a flow becomes smooth and stagnation of filth etc. does not have it, either. Of course, this joint 30 can be applied also when the inhalant canal 4 is piped by horizontal form.

[0020]Next, the joint 30 of the 1st above example of an embodiment is explained in full detail. The adhesive joint part 33, i.e., TS joined part, is formed in the inhalant canal side of the joint body 31, and the inhalant canal 4 is firmly connected to this TS joined part 33, and it does not leave ASOBI to connection between the joint 30 and the inhalant canal 4, but the reliability of construction is raised by extension.

[0021]If it puts in another way, rubber ring junction of the joint will be carried out in the free end of an inhalant canal, this joint will be connected to the free end of a by-pass like a JP,4-117286,U statement shown above, and the flow in an inhalant canal is intermittent, a joint will become unstable each time, but this inconvenience is not produced.

[0022]The flange 34 is formed for the anti-inhalant canal side of the joint body 31 in that opening as the same tube axis as said TS joined part 33, and the cover plate 35 is attached to this flange 34 with the bolt 36, enabling free opening and closing. Therefore, since it will be the same tube axis as the TS joined part 33 if the cover plate 35 is removed, viewing of the inside of the inhalant canal 4 is attained extensively.

[0023]Upward [of the joint body 31] the inspection post 37 made into the same tube axis as the base of the aforementioned branch pipe part 31A is formed, and the cap shape lid (it is also called a sealing inner lid with a rubber ring) 38 is inserted in this inspection post 37, enabling free attachment and detachment.

[0024]The spigot 39 is formed in the branch pipe part 31A of the joint body 31, this spigot 39 is joined to the spherical core 40 with glue, this spherical core 40 is made to fit into the spherical shell 41, enabling free sliding, and the by-pass 7 is joined to the receiving window 42 of this spherical shell 41 with glue. Therefore, it usually passes

along the flow from the inhalant canal 4 to the by-pass 7 according to the shape of 90-degree large knee Y, and flows smoothly, and, moreover, falling of the by-pass 7 can be corrected greatly (for example, 15 degrees) by the swivel joint part 32. Of course, since it is being fixed to the side attachment wall of the manhole main part 1 by the clasp implement as shown in drawing 6, even if the swivel joint part 32 intervenes, ASOBI does not produce the by-pass 7. The adjustable joint used widely and fertilized can be used for this swivel joint part 32, therefore it can make it cheap construction.

[0025] That is, unlike the thing of drawing 7 which provided ASOBI in the free end of the inhalant canal 4, connected the joint, and connected the free end of the by-pass 7 to this joint, since there is no ASOBI in attachment of the joint 30, as drawing 6 showed, it becomes what adhered to the manhole main part in the joint itself, and the reliability of construction improves.

[0026] Next, the joint 45 of the 2nd example of an embodiment is described. Although this joint 45 is as being shown in drawing 2, the point which is different from the aforementioned joint 30 is a point which formed the spherical shell 46 in the branch pipe part 31A in one, and has joined the by-pass 7 to the spherical core 47 with glue.

[0027] Next, the joint 50 of the 3rd example of an embodiment is described. Although this joint 50 is as being shown in drawing 3, The point which is different from the aforementioned joint 30 does not form the swivel joint part 32 in the branch pipe part 31A, but attaches outside the by-pass 7A which becomes the spigot 39 of the branch pipe part 31A from the flexible tube (for example, a corrugated pipe or a helical traveling wave tube is said.) 51, and fixes it by the tight-binding member 52.

Therefore, even if the joint body 31 inclines downward, the by-pass 7 becomes vertical [-like] in accordance with the side attachment wall of the manhole main part 1.

[0028] The 90-degree elbow shown by drawing 6 is not provided in the lower end part of a flexible tube, but it may be made to meet an invert.

[0029] Next



O ring 55 is made to fit into the base of this socket plug 54, and two or more engaging projections 56 and 56 - are provided.

[0030] On the other hand, these engaging projections 56 provide two or more projections 57 with a bundle and 57 - which slide and engage with a hoop direction in the joint body 31. Therefore, if this socket plug 54 is used, the flow from the inhalant canal 4 to the by-pass 7 becomes still more smooth, prevents stagnation of filth etc., and it will not escape from it with the dynamic pressure of wastewater, either, and, moreover, it will also become combination of the cap shape lid 38.

[0031] Next, the joint 64 of the 4th example of an embodiment is described. Although this joint 64 is as being shown in the skeleton figure of drawing 5, unlike having used the swivel joint part 32 shown in drawing 1, 0-15-degree inclination is obtained in the shape of stepless using the eccentric inclined flange fitting joint part (for example, refer to CU joint goods by Aronkasei, Inc.) 58.

[0032] Namely, this eccentric inclined flange fitting joint part 58, Consist of the 1st joint body 59 and the 2nd joint body 60 with the axis bent at an angle of some to this joint body 59, and the rubber ring faucet 61 to one side of the 1st joint body 59 in another side. The eccentric inclined flange fitting part 62 which has the flange which carried out eccentricity in a pipe periphery is formed, respectively, if the receiving

window 63 is formed in another side, respectively and the eccentric inclined flange fitting part 62 carries out relative rotating of both the joint bodies 59 and 60 to one side of the 2nd joint body 60, both the joint bodies 59 and 60 will be bent by 0-15-degree inclination. Therefore, whether the inhalant canal 4 would incline, and the joint body 31 will lean caudad or the opening side of the branch pipe part 31A will not be in a perpendicular state, the by-pass 7 is correctable in the shape of vertical by this eccentric inclined flange fitting joint part 58.

[0033] Although not instead of and illustrated to this eccentric inclined flange fitting joint part 58, the flexible joint part which consists of bellows etc. may be used.

[0034]

[Effect of the invention] Since the terminal area was fixed, ASOBI was lost, since the inhalant canal and the joint body were joined with glue according to this invention, and especially the joint body was fixed, also by an intermittent flow, a joint body does not vibrate, but the reliability of piping is raised, and the inside of an inhalant canal can view extensively from the anti-inhalant canal side.

[0035] Since flexibility was given [**** / connecting a by-pass and a joint body with an adjustable joint etc.] to the by-pass by using the by-pass itself as a flexible tube, it can pipe so that the paries medialis orbitae of a manhole main part may be met in a by-pass, and the reliability of piping is not conjointly spoiled with moreover having fixed with the clasp implement etc. As a result, the piping inclination of an inhalant canal can be made large, the installed number of the manhole for level difference junction can be reduced, and it can be made special cheap construction.

[Translation done.]

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⑱ 考案の名称 水冷式銅ブロックジャケット

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明 細 書

1. 考案の名称

水冷式銅ブロックジャケット

2. 実用新案登録請求の範囲

1. 銅ブロックの内部に孔があけられて通水路が構成され、該通水路の出入口に給排水管がねじ込み接続される水冷式銅ブロックジャケットにおいて、前記通水路の出入口のまわりに前記ねじ込み部分からの漏水を受けるための漏水受け部材を取付けたことを特徴とする水冷式銅ブロックジャケット。

2. 前記漏水受け部材は、前記銅ブロックジャケットの壁面に、前記給排水管の接続部分を囲むようにして取付けられたスリーブ状の外管である実用新案登録請求の範囲第1項記載の水冷式銅ブロックジャケット。

3. 考案の詳細な説明

この考案は、主として高温冶金炉における炉壁部分の冷却に用いられる水冷式銅ブロックジャケ

(1)




ットに関する。

たとえば、硫化金属鉍の精錬に用いられる製錬炉の炉壁においては、第1図に示すように炉壁Wをなす煉瓦1の間に水冷式銅ブロックジャケット2を設置して周囲の煉瓦1の磨損を防ぐようにしている。

この銅ブロックジャケット2は、銅ブロック3の内部に孔をあけ、かつ不要な孔端部に銅の極4をつけて通水路5を形成し、この通水路5の出入口に給排水管6, 7を接続して、内部に冷却水を循環させるようにしたものである。この形式の銅ブロックジャケット2は、内部の孔内（通水路5）に直接冷却水を通すため、ステンレス製通水管と一緒に鋳込んで製作した形式の銅物製の銅ブロックジャケットのように、熱膨張、熱応力等の変化により冷却効率が低下するおそれがないといった長所を有している。

ところが、この種の銅ブロックジャケット2では、銅ブロック3に対する給排水管（ステンレス製等の銅以外の材料よりなる。）6, 7の接続を



通常ねじ式により行なっているため、長期間使用した場合、第1図に示すようにそのねじ接続した部分Bから漏水が生じ、その漏水がジャケット2表面を伝いジャケット2と煉瓦1の目地に入つて、たとえば煉瓦1に割れが生じたり、さらには炉内に達して爆発事故を発生したりするおそれがあった。

この考案は上記事情に鑑みてなされたもので、給排水管の接続部のまわりに漏水受け部材を取付けることにより、前記接続部から漏水が発生してもその漏水が煉瓦との目地等に入らないようにした水冷式銅ブロックジャケットを提供することを目的とする。

以下、この考案を第3図および第4図に示す一実施例に基づいて説明する。図中10は銅ブロックであり、この銅ブロック10の内部には縦横に孔があけられ、不要な孔端部は銅製の栓11により塞がれて1本の連通した通水路12が形成されている。この通水路12の出入口は銅ブロック10の側壁面に設けられ、その出入口にはねじが

切られてステンレス製プラグ13がねじ込まれ、これらプラグ13に給排水管14, 15が密着して固定されている。そして、こうして給排水管14, 15が接続された通水路12の出入口にそれぞれ給排水管14, 15と同心的にスリーブ状の短い外管(漏水受け部材)16が取付けられている。この場合、外管16は給排水管14, 15に対し非接触の関係にあり、銅ブロック10の側壁面に垂直にボルト17により取付けられ、着脱できるようにされている。

そして、こうして構成された水冷式銅ブロックジャケットは、第1図に示すように炉壁の煉瓦間に設置されて、給排水管14, 15により冷却水が循環させられるのであるが、その場合、外管16を取付けてあるので、前記プラグ13のねじ込み部分、つまりは給排水管14, 15の接続部分から漏水が発生しても、その漏水がジャケット表面ではなく、外管16を伝ってその開放端から流れ落ちる。このため、その下側の煉瓦の目地等にまわり込むおそれは全くなく、長期的に安全を

確保することができる。

ところで、この場合外管16の長さは漏水が銅ブロック10の界面にまわり込まない程度の寸法に設定されているのは勿論である。

なお、上記実施例における外管16はさらに延長して漏水を他所へ導くように構成することもできる。

また、上記実施例においては、漏水受け部材として外管16を用いたが、この考案はこれに限られることなく、たとえば接続部の下側に樋を取付けて、これを漏水受け部材としてもよい。

以上のように、この考案は銅ブロックに対する給排水管の接続部分のまわりに漏水受け部材を取付けてあるので、接続部分からの漏水が他へ回るのを防止することができる。したがって、この考案の水冷式銅ブロックジャケットを高温冶金炉の炉壁に組込んだ場合に、漏水が煉瓦の目地に入り込むおそれはなく、それによつて引き起こされる事故を未然に防止することができる。

4. 図面の簡単な説明

(5)

第1図は水冷式銅ブロックジャケットを組み込んだ高温冶金炉の炉壁の縦断面図、第2図は従来の水冷式銅ブロックジャケットの平断面図、第3図はこの考案の一実施例の平断面図、第4図は第3図のN-N矢視図である。

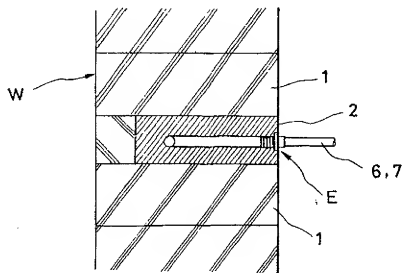
10……銅ブロック、12……通水路、14……給水管、15……排水管、16……外管（漏水受け部材）。

出願人 三菱金属株式会社

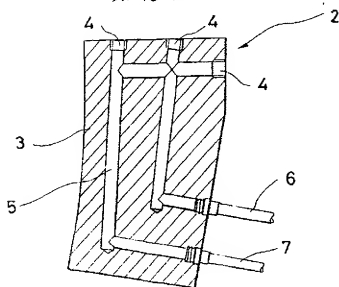
代理人 弁理士 志賀正 蔵



第 1 図



第 2 図

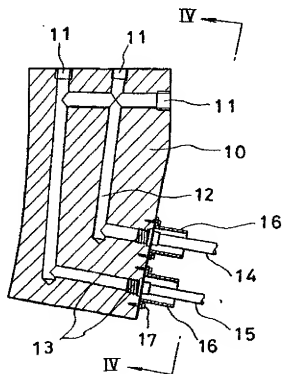


出 願 人 三 菱 金 属 株 式 会 社

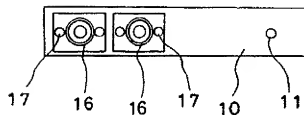
代理人 弁 理 士 志 賀 正 武 901

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第 3 図



第 4 図



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